



## **SRS Citizens Advisory Board**

### **Combined Committee Meeting**

#### **Meeting Summary**

May 21, 2002  
North Augusta Community Center  
North Augusta, SC

---

The following were in attendance at the SRS Citizens Advisory Board Combined Committee Meeting held May 21, 2002, at the North Augusta Community Center in North, Augusta, S.C.

#### **CAB Members**

David Adcock  
Nancy Ann Ciehanski  
Ann Dalton  
Gerald Devitt  
Mel Galin  
Ken Goad  
Perry Holcomb  
Vera Jordan  
J.G. Long  
Jimmy Mackey  
Lola Richardson  
Murray Riley  
Jean Sulc  
Bill Vogelee  
Wade Waters  
Bill Willoughby

#### **Stakeholders**

Bill McDonell  
Mike French  
Lee Poe  
Sam Booher  
Melinda Holland  
Ellie Galin  
Karen Patterson

#### **Regulators**

Keith Collinsworth, SCDHEC  
Don Siron, SCDHEC  
Chuck Gorman, SCDHEC

#### **DOE/Contractors**

Tom Heenan, DOE  
Becky Craft, DOE  
George Mishra, DOE  
Gerri Flemming, DOE  
Karen Hooker, DOE  
Sachiko McAlhaney, DOE  
Soni Blanco, DOE  
Terry Spears, DOE  
Gail Whitney, DOE  
Michele Ewart, DOE  
Patrick Jackson, DOE  
Fran Williams, WSRC  
Howard Walls, WSRC  
Teresa Haas, WSRC  
Jim Moore, WSRC  
Lyddie Broussard, WSRC  
Paul Sauerborn, WSRC  
Helen Villasor, WSRC  
Dawn Haygood, WSRC  
Kelly Way, WSRC  
John Dickenson, WSRC  
Mark Mahoney, WSRC  
Paul Deason, WSRC  
Tor Osmundsen, WSRC  
Bruce Lawrence, WSRC  
Jim Kubar, WSRC  
Sonny Goldston, WSRC  
Elmer Wilhite, WSRC

Chris Bergren, WSRC  
Monty Hawkins, WSRC

The following SRS Citizens Advisory Board members were absent: Meryl Alalof, Judy Barnett, Beckie Dawson, William Lawrence, Dorene Richardson, Heather Simmons, Gloria Williams-Way and Carolyn Williams. Mike Schoener facilitated the meeting.

Tom Heenan, DOE, presented a draft public involvement schedule for the EM Program Pre-Decisional Performance Management Plan and noted plans for receiving stakeholder input to the document by July 15, 2002. He emphasized that DOE is looking for input regarding the approach to work in 2003 and cleanup reform initiatives.

### **Nuclear Materials Committee**

#### **F-Canyon Suspension Report**

Ken Goad briefed the CAB members on the NM meeting held on Monday, May 20. He stated that the committee had learned there was a significant difference between facility shutdown and facility suspension. Goad said a final decision has not been made as to the final fate of F-Canyon. He advised the CAB that a recommendation on F-Canyon will be made later in the year and the NM Committee is continuing its efforts to learn more from DOE, WSRC, and the DNFSB. Work is underway to schedule a NM committee tour of F-Canyon and to gain more specific information on suspension activities. It is his hope that the committee's process will be a model for other DOE sites to follow when considering shutdown of facilities.

#### **DOE Plutonium Metals and Oxides Program**

Sachiko McAlhany opened her presentation by explaining that the disposition strategy for plutonium proposed to come to SRS has recently changed. Her presentation was designed to assist CAB members in understanding when plutonium issues will fall under the CAB's charter for review and comment.

She said there were recent changes to the Mixed-Oxide Fuel (MOX) Program by the U.S. Department of Energy's National Nuclear Security Administration (DOE/NNSA). She said the recent decision by DOE/NNSA to cancel the Immobilization facility has had an impact on the disposition strategy of the 34 metric tons of weapons grade plutonium from the US-Russian Agreement. It also affects some non-weapons grade plutonium as well. As a result, DOE Environmental Management (DOE/EM) will have a greater role in stabilizing and / or dispositioning this material.

As background information, she explained that the original plan called for 8.4 metric tons of impure plutonium metal, oxide, and other forms of the weapons grade material to be processed through the Immobilization facility. In addition, an approximate 3.6 metric tons of non-weapons grade plutonium was also to be dispositioned through this facility. This represented a total of approximately 12 metric tons of weapons and non-weapons grade plutonium that was impacted by the facility cancellation.

The Immobilization facility decision has left DOE/NNSA and DOE/EM with a joint responsibility to determine a new disposition path for this material. At this time, DOE/NNSA will disposition 6.4 metric tons of the weapons grade plutonium. DOE/EM will disposition the remaining 2 tons of weapons grade plutonium that are not acceptable for MOX, as well as the approximate 3.6 metric tons of non-weapons grade plutonium for a total of approximately 5.6 metric tons.

She encouraged public participation in all of the issues regardless of the responsible governmental agency through the National Environmental Policy Act (NEPA) process. McAlhany explained that the plutonium to be dispositioned by DOE/EM does fall under the CAB's charter and welcomes the CAB's involvement in those activities. She also stated that the plutonium stored in the K Area Material Storage

(KAMS) facility would also be under the CAB/s purview whether processed under DOE/NNSA or DOE/EM.

CAB members asked several clarification questions during the presentation. A request was made for future presentations on the DOE/EM plutonium and the KAMS facility. DOE representatives agreed to return when scheduled by the NM Committee chair.

As a follow-up item, there were some questions were not answered because the specific information was not readily available to McAlhany at the meeting. She agreed to provide responses to the following questions:

1. According to an NRC publication, there is a waste building to be constructed to support MOX.
  - A. Is this building DOE or NNSA?
  - B. Will this building increase the liquid waste volume EM will handle?
  - C. Is the waste stream from MOX going to stay MOX or is it going to become EM at some point?
2. How much of the 5.6 MT Pu is at SRS already? at Rocky Flats? Break it down into the specifics of its form, impurities, other constituents, etc.

NOTE 1: Howard Gnann said they would include the Hanford material into the breakdown as well.

### **Strategic & Long Term Issues Committee**

#### **Savannah River Technology Center (SRTC) Technology Process:**

Mel Galin, Chair, stated that one of his objectives is to institutionalize technology in CAB activities. He would like to make sure that the suitable technical information is provided to all CAB Committees and that appropriate technical comments are included in CAB recommendations. Mr. Galin stated that David Adcock is working on a checklist to help determine if technology concerns are included in presentations to the Board. Mr. Galin introduced Dr. Paul Deason.

Dr. Deason, Deputy Director of SRTC, stated he would attempt to explain the process SRTC used in delivering technology solutions and give some examples. SRTC is involved in supporting a wide range of programs from waste to weapons to canyons to satellites. The mission of SRTC is to apply the best science in the development of practical and effective technological solutions that provide maximum value to DOE. The vision is to be recognized as a center of excellence for delivering world class technology solutions vital to DOE missions. Dr. Deason said that SRTC is beginning to be recognized the world over as a center of excellence.

Many disciplines are required to meet the variety of projects worked on at SRTC. SRTC is not a Research and Development (R&D) Facility. SRTC works to solve DOE needs. While SRTC does work on some basic technical concepts and R&D work, its main function is to support the Site's operations. SRTC is more than a research lab and supplies operations support and analysis, applied research and development, real time/real problem solvers, is customer influence oriented and is a conduit for solving DOE complex problems. They maintain the critical technical expertise to address ongoing and emerging mission needs of a highly specialized nature.

Technology is vital to the success of SRS and the DOE Complex because it enhances safety, supports plant operations, reduces cost, provides alternatives to the baseline and enables new missions. Successful technology utilization incorporates both SRTC and customer systems or process knowledge,

relies on a strong working relationship with the end users to define requirements and specifications, focuses on both proven and newly developed technologies tailored for SRS/Complex use and is cost effective. Dr. Deason reviewed the technology process showing how technology is developed at SRTC and the many facets utilized in developing a solution. Examples of projects, new missions, process improvements and new technology worked on by SRTC were reviewed.

During discussion, Jimmy Mackey requested presentations at the Environmental Restoration Committee meeting on Biostimulation studies (Monitored Natural Attenuation of Fringe Areas of Plumes) and the long-term Monitoring of Closure Caps.

#### Quarterly NEPA Update:

Drew Grainger reviewed the status of the Environmental Impact Statements (EISs) and Environmental Assessments (EAs). The EISs status is as follows:

- SRS High-Level Waste Tank Closure – Final EIS is approved in May 2002 and will be distributed to the public. CAB members can receive hard copies if requested.
- Disposition of Scrap Metals from Radiological Areas – Schedule remains uncertain. The Top-to-Bottom review indicated the original scope was too limited. Jimmy Mackey requested a schedule update when available.
- Amended Records of Decision (ROD)
- Storage and Disposition of Surplus Fissile Materials Programmatic EIS and Surplus Plutonium Disposition EIS – Amended ROD published April 19, 2002. The DOE selected consolidated storage, at SRS, of plutonium materials currently stored at Rocky Flats and SRS.
- Interim Management of Nuclear Materials EIS – Amended ROD in preparation to add the Storage and Vitrification in the Defense Waste Processing Facility as an alternative for stabilizing the H-Canyon plutonium solutions.

The EA status is as follows:

- Radioisotopic Thermoelectric Generators – SRS is a potential storage site. Draft EA is expected in May 2002 and is being prepared by DOE – Environmental Management (EM).
- Comprehensive Management Program for Uranium Materials – Draft EA issued in May 2002. Sites for potential storage include Portsmouth, Paducah, Oak Ridge – Y12, East Tennessee Technology Park, Idaho National Engineering and Environmental Laboratory, and SRS.
- Natural Resources Management Activities at SRS – Currently being revised and will be evaluated to determine possible changes in impacts. Draft Revised Finding of No Significant Impact may be prepared and circulated for comment.

On the advice of the Assistant Secretary for Environment, Safety and Health the SRS procedure for NEPA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is being revised. NEPA/CERCLA documents being reviewed are:

- Closure of the R-Reactor Disassembly Basin – SRS proposes a non-time critical removal action to address the interim threats of release. DOE plans to release the Engineering Evaluation / Cost Analysis (EE/CA) for a thirty-day public comment period in May 2002.
- Remediation of the TNX-Area Operable Unit – An assessment of NEPA values will accompany the CERCLA review of the TNX operable unit. CERCLA document (Statement of Basis/Proposed Plan) submittal is anticipated in July 2002.
- Remediation of the General Separations Area Consolidation Unit – Assessment of NEPA values will accompany the CERCLA review of alternatives for remediation of the General Separations Area Consolidation Unit. CERCLA document submittal is expected in May 2002.

Mr. Grainger indicated that NEPA reviews and in some cases EISs may be required prior to implementation of some of the EM Cleanup Reform Appropriations initiative proposals. Stakeholders would continue to be informed via CAB briefings and the SRS Environmental Bulletin. Maximum use would be made of the existing NEPA documents.

Other:

Mel Galin requested that Wade Waters give a report on the videoconference held by Jessie Roberson on May 20. Mr. Waters stated that all nine Site Specific Advisory Board's (SSAB) participated. The DOE-Headquarters link up did not work so it was a dial in conference call. Ms. Roberson asked the sites to express their concerns. The concerns were as follows:

- Rocky Flats – Concerned about surface water contamination. They were not prepared for the consolidated storage of materials left on site but were happy with the openness of the agencies and DOE.
- Los Alamos – They have a new compliance order that the public was coming to terms with. They were concerned about the baseline funding. TRU waste is ready to ship and is parked on top of their aquifer. They felt their public dialog was effective.
- SRS – The plutonium issue was mentioned. F-Canyon suspension is of concern. The CAB is working to come to a position and suspect a CAB Recommendation will develop. Want TRU waste to ship to the Waste Isolation Pilot Plant with shipments tripling and quadrupling in the next two years. HANDS-55 was endorsed and repackaging of Pu 232 will begin.
- Fernald – They have serious concerns about long-term stewardship. They felt they were being informed after the fact about the changes in the cleanup strategic and were not pleased with the program of cleanup.
- Hanford – Want the Solid Waste EIS released. Concerned about the future plans for Hanford when the mission is over. While they were the first to receive Cleanup Reform Appropriations (CRA) funding, they complained they had no voice in the plans and budget development.
- Idaho – Concerned that funding was not driven by risk and the lack of plans to cleanup the buried waste. Also, there is no path forward for technology.
- Oak Ridge – Can only say it was a negative report. They said they heard that the long-term stewardship program was moved from EM. Ms. Roberson said that no decision had been made on the long-term stewardship program.
- Nevada – They want to begin peer reviews of underground test sites. They are pleased with response from DOE.

Mr. Waters said Ms. Roberson responded to the specific responses emphasizing participation in the Waste Workshop coming up. Long-term stewardship would require site specific needs. She expressed concern about the lack of public participation. She asked all sites to focus on work to be done and the funding would follow.

**Long Term Stewardship Committee**

Nancy Ann Ciehanski, Chair, talked about the future of the LTS Committee and the issues that needed to be addressed. She talked about the definition for LTS and concern about what the site will look like at closure. Areas such as the Old Radioactive Waste Burial Ground and F-Canyon need resolution on how they will look at closure. Funding is another issue. There are three documents that are relevant. They are the Strategic Plan, Chapters 2 and 8 of the Comprehensive Plan, and the LTS Site Acceptance Criteria. Ms. Ciehanski requested that Chapters 2 and 8 of the Comprehensive Plan be distributed to all CAB members. Ms. Ciehanski requested that if anyone had comments on the LTS Site Acceptance Criteria, they should forward them to Jim Moore.

Ms. Ciehanski requested that those present give her ideas on subjects for future agenda items for the LTS Committee. A list was developed on a flip chart as follows:

- Environmental Restoration Cleanup Records of Decision (RODs) – Use for Shorter Term
  - First layer to long-term stewardship
- Land Use Control Assurance Plan should be sent to the LTS Committee
- Facilities without RODs – What will be done in the interim?
- Define long-term. What's reasonable?
- Set baseline guidance. – How far?
- Storage – Useful period – Alternatives (3013 containers good for 50 years, what happens after that?)
- Be realistic, analytical when deciding the long-term period.
- Locations for new facilities.
- Consider technology.
- White paper to bring CAB up-to-date on what's been done/considered.
- Incorporate long-term stewardship in all presentations.
- Develop a response to long-term stewardship guidance that is out for comment.
- National Environmental Research Park (NERP) – Institutionalize.
- Change name of the LTS Committee to Continuing and Long Term Stewardship Committee.
- Talk with the Consortium for Risk Evaluation with Stakeholder Participation (CRESP).
- Where is long-term stewardship funded?
- Address the siting criteria.

### **Waste Management Committee**

#### **High Level Waste System Plan**

Mark Mahoney opened his presentation by noting that Revision 13 of the *High Level Waste (HLW) System Plan* had just been published and copies were now available. Mr. Mahoney said it is important to know that the *High Level Waste System Plan* is not the same document that is simply revised each year. Instead, Mr. Mahoney said the revisions typically include new strategies that cover HLW operations and missions for the coming year.

Mr. Mahoney said the document explains the HLW system including how waste is received from the canyons and other site generators, and placed in storage tanks. Since the beginning of plant operations, over 120 million gallons of waste has been received into the tank farms; however, Mr. Mahoney said there has been a volume reduction to 38 million gallons, mainly through the use of the HLW system's three evaporators. Explaining that there are two main categories of waste, i.e., sludge waste and salt waste, Mr. Mahoney said the consistency of the sludge is similar to thin peanut butter and when it comes into the tanks, the insoluble solids contained in the waste settle to the bottom of the tank. However, the consistency of the sludge can vary from tank to tank. The liquid portion of the waste contains dissolved salts, which are stored in three forms, the decanted liquid or supernate, and after evaporation, the concentrated supernate and salt cake (crystallized out of solution).

Mr. Mahoney provided an overview of the HLW tank usage and noted that Tanks 17 and 20 have been filled with grout and are closed. Tanks 1 through 24 are the old style tanks from the 1950s and 1960s and are non-compliant since they do not meet the requirements for secondary containment and are expected to be closed by 2022. Referring to a chart on HLW tank usage, Mr. Mahoney said that Tanks 40, 48, 50 and 51 are currently used for processing operations in support of waste pre-treatment. Mr. Mahoney pointed out the use of tanks for storage of salt cake, supernate and sludge.

Overall, Mr. Mahoney said that HLW facilities are operated as an integrated system. For example, the Tank Farms provide working space for treatment activities, waste removal sends feed to pre-treatment facilities, pre-treatment facilities send feed to treatment facilities and evaporators receive feed streams from the treatment facilities. Noting that a lack of integration would result in major inefficiencies, Mr. Mahoney said that integration actually optimizes the best solution for the system rather than sub-optimizing individual plants and allows "just-in-time" financing.

Referring back to the *HLW System Plan*, Mr. Mahoney said that it is the HLW Management Division level production-planning document. It defines system priorities and drivers, defines the scopes and key schedule need dates for the program, specifies the operating plan, and identifies programmatic, technical and financial uncertainties. Mr. Mahoney emphasized that the *HLW System Plan* is a joint WSRC and DOE document that is issued at least annually. According to Mr. Mahoney, one of the HLW system drivers includes reducing risk by safely storing the existing inventory of high level waste, fully supporting nuclear materials stabilization missions, removing waste from tanks, and immobilizing HLW by sending low-level waste to Saltstone and high level waste to DWPF. Other drivers include meeting regulatory commitments such as the Federal Facility Agreement and the *Site Treatment Plan* and minimizing "to-go" life-cycle cost to the extent possible.

At this point in his presentation, Mr. Mahoney discussed tools for production planning that allows the division to predict HLW system performance. Some of the tools include the Waste Characterization System that looks at the composition of the waste in the tanks; Spaceman II, which tracks the movement of waste and the available tank space; and GlassMaker, which determines if acceptable glass blends can be made for sludge batches. Noting that these tools provide integrated system planning results, Mr. Mahoney said while the production planning models ensure system integration and allows "just-in-time" scope delivery, the financial model ensures that financial resources are allocated for best system results. In closing the HLW System Plan portion of his presentation, Mr. Mahoney summarized by saying that the System Plan is the HLW production planning document that defines system priorities, defines scope and key schedule need dates, specifies the operating plan and identifies key vulnerabilities.

Moving next to Revision 13 of the *HLW System Plan*, Mr. Mahoney, provided an overview of this year's changes to the document. Revision 13 was developed to update salt processing strategy; to update the status of key commitments made in Revision 12; update the status of key issues, assumptions, and vulnerabilities in the HLW system; and to summarize major scope changes since the last revision. However, Mr. Mahoney emphasized that Revision 13 does not include the EM Initiatives for accelerated site cleanup.

Mr. Mahoney said that three different salt disposition strategies were modeled to bound varying levels of salt processing success and each of the three modeled strategies used the same set of approved assumptions for items such as Tank Farm evaporation rates, sludge preparation, and forecasting influent volumes. Several questions were raised concerning the cases and Mr. Mahoney offered to come back and make a future presentation to the WMC on more details related to the cases.

In closing his presentation, Mr. Mahoney summarized that Revision 13:

- Documents the benefits of accelerated success in salt processing
- Provides status on progress towards meeting Site contract HLW commitments documented in Revision 12
- Documents major scope changes from Revision 12
- Updates key assumptions, issues and vulnerabilities
- Provides the operating strategy for the next year

In response to a question that if a main driver is to close the old tanks by 2022, would budget cuts affect canister production and affect closure dates for the old tanks, Mr. Mahoney said that it would. Mel Galin asked if there were any other delays that the CAB should know about. Other than budget, Terry Spears said that construction could be another. In response to Jimmy Mackey's question if there were any scheduled outages for the evaporators, Mr. Mahoney said that while the 3H Evaporator is down because of cooling issues, a task team has been developed to work on the major modifications to retrofit the evaporator. Mr. Mahoney emphasized that some innovative ideas have been implemented to mitigate the cooling issue impacts and allow the 3H Evaporator to operate at significantly greater rates than had been forecast a year ago. This increased operation has resulted in increased tank space that is available for use in the HLW system.

#### Update on Low Curie Salt/Saltstone Startup

Tor Osmundsen opened his presentation by noting that the major objectives of the Low Curie Salt/Saltstone Startup is to accelerate risk reduction by emptying tanks sooner and processing three salt tanks by 2007 to the Saltstone vaults, and to provide additional tank farm flexibility. Mr. Osmundsen then provided a brief overview of the initial salt processing program and said that three to five percent of the total Cesium-137 (CS-137) inventory would be disposed at Saltstone. Mr. Osmundsen further explained the steps of the low curie salt treatment, which include:

- Separation of sludge from soluble waste
- Formation of salt cake from the evaporation and fractional crystallization of the soluble waste
- Separation of the remaining concentrated supernate from the salt cake (cesium is the most soluble constituent and tends to remain in the supernate)
- Dissolution of the drained salt cake, settling of insolubles and transfer to Tank 50
- Adjust the salt concentration to a range compatible with Saltstone processing

Mr. Osmundsen explained that to qualify the contents of Tank 50 to meet low level-waste disposal requirements, the following actions would be required:

- Performance Assessment for the protection of the public and the environment (to South Carolina Department of Health and Environmental Control (SCDHEC) Drinking Water Standards at the point of compliance)
- Nuclear Regulatory Commission (NRC) limits for Class C
- SCDHEC permit conditions
- Safety basis
- Design features, As Low As Reasonably Achievable (ALARA), etc.

However, Mr. Osmundsen quickly pointed out that the material would be returned to the Tank Farm if qualification failed. Using a cartoon chart to show the steps in the Low Curie Salt (LCS) process, Mr. Osmundsen said the first step is to "mine" a salt well and install a pumping system near the tank bottom. Step two involves draining the salt cake by pumping liquid from the bottom of the well where the high curie content liquid is removed. In step three, the pumping system inside the well is raised to avoid the remaining high curie liquid. Step four is to add clean water to the tank to re-saturate drained salt and pump out the resulting low curie salt solution. Step five calls for an analysis of the dissolved salt solution to ensure that it meets the disposal criteria.

Mr. Osmundsen briefly discussed minor chemical changes in the low-level waste characteristics for Saltstone. For example, less solid waste is produced as a result of the higher salt concentration, the concentrations would vary inversely with the water content (the LCS stream is projected to be nearly one-third more concentrated), and the potassium nitrate ( $\text{KNO}_3$ ), and mercury salts are larger than 1988 permit values since they are no longer removed by precipitation with sodium tetraphenylborate. Mr. Osmundsen said the bottom line is that the chemical changes are within the Saltstone formulation envelope with no changes expected in the toxic characteristic leaching procedure (TCLP) response and/or in the overall environmental response.

In terms of changes in radionuclides for the low-level grout characteristics for Saltstone, Mr. Osmundsen presented that the water content is reduced by 17 percent. In addition, Cobalt 60, Promethium-147, and Europium-154 increase since the LCS process does not filter out entrained sludge. Strontium-90 and Plutonium-238 increase since monosodiumtitanate is not used to sorb and then filter these materials and Cesium-137 increases since tetraphenylborate is not used and not all interstitial supernate is drained from the salt cake. However, Mr. Osmundsen said that the existing vaults are commensurate with the NRC Class C requirements and that the compositional changes do not result in changes in the environmental response.



Mr. Osmundsen presented a chart that depicts the low curie Saltstone versus the NRC waste class for cesium and noted that while the cesium level will increase it falls just above the B limit on the chart, with an alpha limit of 99. To explain how material in the high level waste system can be managed as low-level waste, Mr. Osmundsen said that a waste incidental to reprocessing (WIR) evaluation (DOE Order 435.1) is required to allow salt cake to be disposed in Saltstone. However, to meet WIR requirements, waste must be processed to remove key radionuclides to the maximum extent technically and economically practical; meet safety requirements comparable to performance objectives set out by the NRC in 10CFR61; and be incorporated into a solid physical form that does not exceed NRC Class C concentration limits or meet alternative requirements. Mr. Osmundsen said that WIR for LCS processing was submitted by WSRC in December 2001 and was approved by DOE in March 2002.

In closing, Mr. Osmundsen said that LCS processing discussions with SCDHEC have been encouraging and activities are underway, with the transfer of free supernate from Tank 41 completed, Saltstone restarted April 22, 2002 (emptying existing Tank 50 contents), and the draining and dissolution transfer system is in fabrication.

#### Site Treatment Plan Status

Bruce Lawrence began his presentation with the objective that SRS must treat radioactive mixed waste (wastes that are both radioactive and Resource Conservation and Recovery Act (RCRA) hazardous) in accordance with the SRS *Site Treatment Plan* (STP). In providing background on the STP, Mr. Lawrence said that the Federal Facility Compliance Act of 1992 identified mixed waste (MW) storage at DOE facilities as a problem and as a result required all DOE sites to prepare STPs to demonstrate an approach to resolving the problem. SCDHEC and DOE signed the SRS STP/Consent Order on September 29, 1995. The document contained milestone commitments for MW treatment, stated that annual updates are required, and confirmed that milestones could be modified for good cause. However, it is mandated that all STP modifications must be approved by SCDHEC.

In his presentation, Mr. Lawrence noted that SRS uses many different facilities to manage its MW. For example, the STP has a commitment to maintain HLW canister production sufficient to meet SRS's commitment for removal of waste by 2028. To date, Mr. Lawrence said 1250 canisters have been poured at DWPF. Mr. Lawrence said that DWPF is on target to meet the commitment, assuming there is no change in the Salt Waste Processing schedule.

As an example of how milestone commitments could be modified for good reason, Mr. Lawrence noted that since many of the attendees were familiar with the Consolidated Incineration Facility (CIF) through the work of the WMC and the CIF Focus Group, they saw firsthand how the decision was made to pursue alternative treatment for its legacy PUREX waste by December 2008. Mr. Lawrence also discussed the commitment for non-PUREX waste processing, which has to be completed by 2007. Mr. Lawrence said that both commitments required SCDHEC approval of the modifications. Mr. Lawrence pointed out that the new milestones that arose from the decision to pursue alternative treatment methods were reflected in the latest revision of the SRS STP.

Mr. Lawrence also highlighted the Solid Waste Division's Transuranic Waste Program and noted that STP commitments required SRS to submit a RCRA Part B modification for a Category III facility by September 30, 2001. The action was completed on schedule, and startup of the facility has been proposed to occur within 36 months of the SCDHEC Part B modification approval. Noting that shipments to the Waste Isolation Pilot Plant (WIPP) are also a STP commitment, Mr. Lawrence said that SRS is on target to make 12 shipments in fiscal year 2002.

In providing some examples of completed treatments, Mr. Lawrence said that 50 percent of the non-PUREX was had been burned in CIF, electroplating waste and soils had been vitrified at M Area, and filters were stabilized at a vendor facility. In closing, Mr. Lawrence said that the bottom line is that the STP is an important legal agreement that is required for the treatment of mixed waste and that SRS must continue to work closely with SCDHEC to implement the best treatment methods.

When asked what the alternate plan is for the non-PUREX waste. Mr. Lawrence responded that it would be sent offsite to vendors for incineration, stabilization, macroencapsulation, etc. When asked what SRS is doing right now, Mr. Lawrence said that some wastes had already been sent offsite to M&EC in Oak Ridge. In terms of treating lead, SRS does not have the capability to treat the material so the STP requirement is simple, i.e., it must be sent to a commercial vendor within the STP schedule dates. Mr. Lawrence clarified that the goal to treat ten percent of the PUREX aqueous waste is not in the STP, but it is in the permit modification. (Note: Clarification is hereby included that the ten percent is not a permit condition, but it was discussed with SCDHEC during negotiations of the CIF RCRA Closure Plan.) Mr. Lawrence closed his presentation by saying that if anyone was interested in receiving a revised STP to let Helen Villasor know.

Bill Willoughby closed the Waste Management Committee portion of the meeting by announcing that the Waste Management and Nuclear Materials Committees will be hosting a combined committee meeting on June 18, 2002 at the North Augusta Community Center. Topics for discussion will include a presentation on Americium/Curium, an update on Low Curie Salt/Saltstone Startup, and a Transuranic Waste Progress report.

### **Environmental Restoration Committee**

Independent Inspection of the SRS Environmental Monitoring and Surveillance Programs:  
Jim Heffner of the Environmental Monitoring Section at the SRS provided the following status of the corrective actions associated with the independent inspection. Mr. Heffner stated that the audit was conducted by the EH-2 DOE-HQ Program, and that the scope of the audit was to look at Environmental Monitoring, Effluent Monitoring, and Environmental Surveillance.

Mr. Heffner stated that the audit results were very positive, resulting in areas for improvement (3 issues, and 7 observations). DOE-HQ requires a Corrective Action Plan (CAP) for issues, and DOE-SR requires a CAP for observations.

The issues and observations status is as follows:

Issue 1: SRS does not meet several requirements; Settleable solids, Technitium-99, Stormwater basin sediment.

Status – Complete:

- Added annual review of total suspended solids data
- Added Technitium-99 analysis
- Added select analysis for stormwater basin sediments

Issue 2: SRS criteria for posting soil contamination areas do not meet requirements.

Status – No Change:

- No change made – DOE-SR and DOE-HQ concurred with WSRC position

Issue 3: SRS groundwater monitoring program is not fully integrated.

Status – In progress:

- Groundwater Management documents updated
- Documents address each deficiency
- Hard part is concurrence and acceptance by multiple organizations

Observation 1: Liquid effluent sampling is not always representative.

Status – Closed:

- No action required

Observation 2: Inventories of potential discharge points have not been maintained.

Status – Closed:

- Drainage maps updated to ensure all discharge points are known

Observation 3: SRS risk based approach has not been implemented fully.

Status – Closed:

- Monitoring plans updated and discharge points characterized by risk
- Updates planned every 5 years or as needed by facility changes

Observation 4: Radiological dose associated with air surveillance network is not adequately delineated in the Annual Report.

Status – Closed:

- Dose will be calculated and described in the Annual Reports

Observation 5: Radioactive surveys at inactive facilities should be established at some minimum frequency in addition to "upon entry".

Status – Closed:

- No Action

Observation 6: SRS stack flow measurement calibrations are performed shortly before stack flow testing.

Status – Closed:

- Flowmeter calibration practices and schedules have been revised.

Observation 7: SRS air filter collection practices do not adequately protect sample integrity.

Status – Closed:

- Procedure revisions and retraining have been implemented.

Mr. Heffner stated that in conclusion the audit was thorough and professional, the corrective measures have been implemented and the groundwater protection program integration is in progress.

Mel Galin asked what the significance of Technetium-99. Mr. Heffner stated it was a radionuclide that will be of greater significance in the future because of its half life and will be monitored accordingly. Keith Collinsworth stated that the SCDHEC is an independent observer of SRS, and would be the agency to lend credibility to the sampling program. Mr. Heffner pointed out that the audit only looked at compliance with DOE requirements and directives.

#### Dynamic Underground Stripping (DUS) Projects

Jim Kubar began his presentation with the remediation history of the A/M Area. Mr. Kubar stated that chlorinated solvent discharges into A/M area soils totaled approximately 3.5 million pounds and that phased remediation and characterization programs have been ongoing since the 1980's. To date over 1.2 million pounds of solvents have been extracted from the subsurface. The technologies deployed have been pump and treat, soil vapor extraction and recirculation wells for plume containment. The Dynamic Underground Stripping (DUS) was successfully performed at the solvent storage area, a known source

area of dense non-aqueous phase liquids (DNAPL's) and was able to remove 70 thousand pounds of the DNAPL.

Mr. Kubar pointed out that the patented technology was developed by Lawrence Livermore National Laboratory (LLNL) and University of California, Berkeley with DOE funding. The technology works by injecting steam and followed by oxygen injections to enhance remediation of contaminants. Electrical resistance tomography in combination with thermocouples are used for imaging to monitor progress of heating fronts. SRS had historical success at the Solvent Storage Tank Area in M Area.

Mr. Kubar stated that the new (DUS) deployment would be located at the M-Area Settling Basin, which received approximately 2 million pounds of waste over numerous years of M-Area operations. This new deployment encompasses 10 million cubic feet of treatment zone targeting area of confirmed DNAPL presence. Mr. Kubar pointed out that the deployment uses a new design and the permit requirements are unique in scope and magnitude.

Perry Holcomb asked what contamination levels the Western Section wells were picking up. Mr. Kubar stated that the wells are picking up between 7 and 10 parts per million (ppm) in water. The drinking water standard is 5 parts per billion (ppb). Lola Richardson asked how costly is the DUS process. Mr. Kubar stated that the first deployment in M-Area was approximately 4.8 million and the second new deployment was at least 7 times larger but only projected to cost 2 to 3 times more than the first (10-15 million dollars). Bill Willoughby asked when the Southern Sector Wells would be terminated. Mr. Kubar indicated that if all actions go as planned, the wells might be terminated in approximately 10 years. He also stated that there were many variables in his answer.

The meeting adjourned at 4 p.m.

*Meeting handouts may be obtained by calling 800-249-8155.*